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# BECHUANALAND PROTECTORATE.



## ANNUAL MEDICAL AND SANITARY REPORT FOR THE YEAR 1930.

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PRINTED BY  
WATERLOW AND SONS LIMITED,  
London Wall, London.  
1932.



*1007*  
D.O. 3.

Bureau of Tropical  
Diseases.

Communications on this subject  
should be addressed to—

THE UNDER-SECRETARY OF STATE,  
DOMINIONS OFFICE,  
DOWNING STREET, LONDON, S.W.1,  
and the following number quoted:—

11517/10

Subject: *Bechnanaland*  
*Protectorate. Medical*  
*and Sanitary Report for*  
*1930.*

Reference to previous correspondence :

Letter ~~to~~ from the Dominions Office of the *13 January 1931.*  
11517/3.

*Copy Report*  
Transmitted by direction of the Secretary of State for  
Dominion Affairs.

A copy has also been sent to the

Dominions Office, Downing Street,

2 - APR 1932 19




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### SECTION I.—ADMINISTRATION.

(a) STAFF (*as on 21st December, 1930*).

*European :*

- Principal Medical Officer.
- 6 Medical Officers.
- 2 District Medical Officers (subsidised).
- 3 Staff Nurses.
- 2 Temporary Staff Nurses.
- 3 Dispensers.
- 1 Principal Medical Officer's Clerk.

*Native :*

- 2 Pupil Dispensers.
- 4 Medical Orderlies.
- 2 Male Nurses (Probationers).
- 2 Female Nurses (Probationers).

#### *Appointments, Changes, etc., in the Staff.*

Duncan M. MacRae, M.A., M.D., Ch.B. (Glasgow University), Medical Officer, Francistown, retired on the 31st March, 1930, on reaching retiring age.

Desmond Drew, B.A., M.B., Ch.B., Medical Officer, Gaberones, transferred to Francistown on 31st March, 1930, to replace Dr. Duncan MacRae.

Ronald H. Mackintosh, L.R.C.S. (Edinburgh), L.R.C.P. (Edinburgh), L.R.F.P. & S. (Glasgow), on leave from 1st January to 30th April, 1930, when he was posted as Medical Officer to Gaberones, vice Dr. Drew.

Alexander Skinner, M.B., Ch.B. (Aberdeen), Medical Officer, Tuli Block, posted to Maun, Ngamiland, on 1st July, 1930, to replace Dr. Henderson, who was transferred to Lobatsi.

D. J. D. Henderson, M.B., Ch.B. (Edinburgh), F.R.C.S. (Edinburgh), Medical Officer, Maun, Ngamiland, granted one month's leave on 1st July, and on 1st August was posted to Lobatsi.

Maximilian Garber, M.A., M.D. (Dublin), appointed Medical Officer on 1st April, 1930, and posted temporarily to Gaberones on relief duty; and on 1st May, transferred to the Tuli Block, to relieve Dr. Skinner, who was granted one month's leave prior to proceeding to Ngamiland.

Miss F. M. Verney appointed Nursing Sister on 18th August, 1930, and posted in charge of the Athlone Hospital, Lobatsi.

Miss Ruth Lewis appointed Nursing Sister on 18th August, 1930, and posted to the Athlone Hospital, Lobatsi.

Mrs. de Villiers, temporarily appointed Staff Nurse at the Athlone Hospital, Lobatsi, on the 20th November, 1930.

Miss C. M. Hay, temporarily appointed Staff Nurse at the Athlone Hospital, Lobatsi, on 17th December, 1930.

Miss C. H. Mitchell, Nursing Sister, Serowe, transferred for temporary duty at the Athlone Hospital, Lobatsi, from 19th October, 1930, to 7th December, 1930, pending the approval of the appointment of the two temporary Staff Nurses indicated above.

Mr. T. E. Booker, Dispenser at Gaberones, was transferred to Molepolole to attend to the Outpatients there under the supervision of the Medical Officer, Gaberones.

Postings of Staff on the 31st December, 1930.

*Mafeking :*

Hamilton W. Dyke, M.B., Ch.B., Principal Medical Officer.  
1 Clerk.  
1 Native Orderly.

*Francistown :*

Desmond Drew, B.A., M.B., Ch.B., Medical Officer.  
1 European Dispenser, H. F. Bennett.  
1 Native Pupil Dispenser.

*Serowe :*

Austin Morgan, B.A., M.B., B.Ch., B.A.O., Medical Officer.  
1 Nursing Sister, Miss C. H. Mitchell.  
1 Native Orderly.

*Gaberones :*

R. H. Mackintosh, L.R.C.S., L.R.C.P., L.R.F.P. and S., Medical Officer.  
1 Native Orderly.

*Lobatsi :*

D. J. D. Henderson, M.B., Ch.B., F.R.C.S.E., Medical Officer.  
2 Nursing Sisters, Miss E. M. Verney and Miss R. Lewis.  
2 Temporary Staff Nurses, Mrs. de Villiers and Miss Hay.  
1 Native Pupil Dispenser.  
2 Native Male Nurses (Probationers).  
2 Native Female Nurses (Probationers).

*Ngamiland :*

Alexander Skinner, M.B., Ch.B., Medical Officer.  
1 Native Orderly.

*Tuli Block :*

M. Gerber, M.A., M.D., Medical Officer.  
1 Native Orderly.

*Kanye :*

A. A. Huse, L.R.C.P. and S., L.R.F.P. and S., District Medical Officer (Subsidised).

*Mochudi :*

G. M. Malan, M.B., District Medical Officer (Subsidised).

*Ghanzi :*

1 European Dispenser, A. Boyle.

*Molepolole :*

1 European Dispenser, T. E. Booker.



The appointment of an additional Medical Officer was asked for on the Estimates for 1930-1931 to serve the needs of the Bakwena Tribe (Molepolole) and to be available for relief duty, but the financial resources of the Administration did not permit of this appointment. In order to meet the repeated and fully justified requests of the Bakwena Tribe, in September Dispenser Booker was detailed to take charge of the Outpatients at Molepolole under control of the Medical Officer, Gaberones, who continued his fortnightly visits. The arrangement was fully justified and greatly appreciated by the Tribe.

The London Missionary Society have informed the Administration that early in 1931 they wish to appoint a Medical Missionary to Molepolole. When this is accomplished there will no longer be the need for maintaining a Government Dispenser there, and the Dispenser will be available for duty at Serowe, where—as was indicated in last year's report—the Medical Officer has to deal single-handed with a population of 27,000 in the native Township alone, as well as the needs of over 50,000 natives living in lesser villages in the remainder of the Ngwato Reserve at distances from 50 to 200 miles; in addition to his public health—and a medico-legal work and the running of the Hospital which will be ready to receive patients in February—an impossible task for one man to accomplish efficiently, however energetic he may be. The posting of a second Medical Officer to Serowe should be effected as soon as circumstances permit.

The need for an additional Medical Officer, particularly for relief duty, cannot be overstressed. In a climate such as obtains throughout most of the Protectorate, it is essential that Officials should take the leave which they have earned, but as it is unlikely that this appointment will be made in the ensuing year, it will be necessary to close down the medical work in the Tuli Block for practically ten months of 1931, that being the station from which a Medical Officer could best be spared. This will deprive the very large native population to the North of Selika (the Magistracy of the Tuli Block) of the only medical man within 100 miles of them. Until May, 1930, the Medical Officer for that District was stationed at a farm, Basinghall, 60 miles south of Selika, where he was too far from the native villages. He was therefore removed to Selika Magistracy where a small Dispensary was erected and he was accommodated in two huts spared by the Magistrate, pending the erection of suitable quarters. Within a few days of the Medical Officer taking up residence at Selika increasingly large numbers of natives from the surrounding area came for treatment, most of whom had never seen a European doctor; and the dramatic effect of Arsenical and Bismuth salts on Syphilitic lesions rapidly gained their confidence and within three months it was a common occurrence to have three or four bullock waggon at a time camped in the bush not far from the Magistracy so that the natives could undergo a course of treatment. It is most regrettable that for want of the necessary additional Medical Officer this important work should be suspended.

In the last Annual Medical Report the pressing need for more Medical personnel was indicated. Since then one has had the opportunity of visiting certain portions of the Territory where large populations are scattered over wide areas and who have never seen or been able to consult a European Doctor. It would not be possible permanently to station medical men in these outlying parts, but a vast amount of good could be done by having two medical men equipped with travelling Dispensaries (motor lorries) who could make tours twice a year to these remote areas, giving treatment to many who—on account of distance and the lack of conveyances—are unable to have medical attention, and thus have their miserable existence ameliorated.

The Medical requirements of the European and Native personnel of the South African Railways operating the Section of Railway, Mafeking to Bulawayo, for the Rhodesian Railways, continues to be served by members of the Medical Service. The redistribution affected last year so that three instead of two Medical Officers perform the duties, has proved eminently satisfactory in reducing the time of absence of the Medical Officers from their stations.

For some years past a Central Medical Stores has been in existence at Gaberones under the control of the Medical Officer and a European Dispenser. Drugs, Dressings and Equipment for all the Stations were sent there and redistributed. By consigning direct to each Medical Officer his yearly supplies, and obtaining a contract price from a reliable wholesale firm in South Africa for such items as might be required in emergency and to supplement consignments from England, it has been possible to do without the Central Medical Stores, which has



been closed down, thus freeing the Medical Officer and Dispenser for the more pressing duties of attending to sick people; and now all matters connected with supplies are dealt with directly by the Principal Medical Officer's Office.

During the period under review all the Stations where Medical personnel are stationed—except Ghanzi—were visited by the Principal Medical Officer. It is the first time Ngamiland has been inspected in this way—time and expense being the main factors preventing such a tour, as the headquarters for Ngamiland district is 300 miles by road through forest and bush lands from the nearest railway station (Livingstone) and 1,100 miles from Administrative headquarters at Mafeking. The Resident Commissioner, accompanied by the Principal Medical Officer and the Chief Veterinary Officer, undertook the tour, and much valuable experience was gained from an administrative point of view, and the needs of that remote part of the country were visualized in a way that could not have been done from reports.

(b) LIST OF ORDINANCES AFFECTING PUBLIC HEALTH DURING THE YEAR.

In last year's Report reference was made to High Commissioner's Notice No. 151 of 1928 approving the Regulations and Conditions governing Medical Service in the Bechuanaland Protectorate. Subsequent to its promulgation, owing to adverse criticism on the part of medical men both within and without the Territory, and indeed of the Medical Association of South Africa (British Medical Association), these Regulations were revised and in their place new Regulations were published and promulgated, High Commissioner's Notice No. 54 of 1930, dated 28th May, 1930—thus cancelling High Commissioner's Notice No. 151 of 1928. Before publication they were submitted for review to Members of the Federal Council Medical Association of South Africa (British Medical Association) who endorsed them unreservedly.

(c) FINANCIAL—IN RESPECT OF FINANCIAL YEAR 1929-1930, ENDING 31ST MARCH, 1930.

<i>Revenue :</i>						
Hospital and Dispensary Fees	...	...	...	...	...	£180
Being an increase on Revenue for 1928 by	...	...	...	...	...	136
(Revenue for Calendar year 1930)—approximately	...	...	...	...	...	300
<i>Expenditure :</i>						
Personal Emoluments	...	...	...	...	...	7,274
Other Charges	...	...	...	...	...	4,523
						£11,797
Total Revenue of Protectorate for 1929	...	...	...	...	...	£146,606
Total Expenditure of Protectorate for 1929	...	...	...	...	...	156,110
Relation of Medical Expenditure to Total Expenditure	...	...	...	...	...	7.56 per cent.
Cost of erecting New Hospital at Lobatsi, including Outpatient Department	...	...	...	...	...	11,960 16 11
Cost of Equipment	...	...	...	...	...	1,251 18 7
Cost of erecting New Hospital at Serowe	...	...	...	...	...	10,930 3 10
Cost of Equipment	...	...	...	...	...	1,251 18 7
(The cost of erecting and equipping these New Hospitals was paid out of Capital Funds.)						

SECTION II.—PUBLIC HEALTH.

Under this Section the Protectorate has been relatively fortunate. Owing to a lower rainfall generally, throughout the year, there was a general decrease in the incidence of Malaria throughout the country except perhaps in Ngamiland. Apart from outbreaks of Influenza of a severe type in two Districts—Serowe and Gaberones—and three small outbreaks of modified Smallpox in the Francistown area, the Territory has been comparatively free of serious epidemic diseases.



An important factor in limiting the spread of epidemics is that the principal tribes who inhabit the Protectorate are, so to speak, self-contained communities with very little intercommunication. Marriages and friendships, commercial dealings, and matters of common interest are almost entirely intra- and not inter-tribal. The great distances between tribal headquarters have more to do with this lack of intermingling of the tribes than anything else, because in origin, habits and customs, speech and physical characteristics, they are very intimately allied. Undoubtedly this will tend to keep epidemics like Influenza, Smallpox, etc., more or less localised to one tribe or even to one particular section of it. And, moreover, there is very little coming and going between the natives of the Protectorate and those of surrounding Territories, except to the limited extent of a certain number of young men going to work on the Mines or other industrial centres, or between the Bakgatla of Mochudi and those of the Transvaal. This also helps to restrict the opportunity for the introduction of communicable diseases from outside. By far the greater number of travellers to and from the Territory are Europeans passing through the country from the Union of South Africa to the Rhodesias and vice versa; and as practically all these travel by rail they can be excluded as carriers of disease. Hence the work of the Administration in this respect is considerably facilitated.

The General Diseases under this Section that require special comment are as follows:—

*Scurvy*.—In last year's report 253 cases were notified; this year the number is 72. This amelioration must not be accepted as an indication that there has been a definite reduction in the incidence for, as the Medical Officer, Francistown, observes, "Although this year not many cases of definite Scurvy have been observed, a great many chronic ulcers in patients with spongy gums improved only after anti-scorbutic diet was given."

*Respiratory Diseases*.—There were 2,721 attendances for Bronchitis and other Respiratory conditions, including 181 cases of Pneumonia and Broncho-pneumonia. Every District Medical Officer comments on the large number of cases of Bronchitis, men suffering relatively more frequently than women. The impression conveyed by two Medical Officers that Bronchitis is Malarial, requires further investigation before it can be accepted.

*Diarrhœa and Enteritis* accounted in all for 702 cases (1.79 per cent. of all attendances). This incidence is remarkably low considering the mode of life of these people living under tropical conditions and with little or no sanitation. As it is generally recognised that the death rate among native children in South Africa is very high, in all probability many of them die from intestinal derangements without a doctor being consulted, those who survive having developed a natural immunity.

#### COMMUNICABLE DISEASES.

*Syphilis*.—The attendances for Syphilis have been far greater than for any previous year, and it is encouraging to see the growing confidence of natives in European Doctors. The total attendances for all forms of the disease were 11,110 (as compared with 1,619 in 1928 and 2,879 in 1929). Of the total attendances 9,199 were for the Tertiary stage; the principal reason for this being that as a rule Primary and Secondary manifestations are, in the natives, comparatively benign and, occurring largely in children, no special effort is made to seek treatment. It is only when mutilating effects occur with loss of palate and nasal septum that there arises the desire for efficient treatment.

Owing to the lack of means for making a survey throughout the country by means of blood tests (Wasserman and others) the incidence in the whole population cannot be accurately estimated, but the general impression of Medical men working in the Territory is that over 75 per cent. of all adults have been affected at one time or another. Recently a batch of apparently healthy Bechuana recruited for work on the Mines, and who had previously passed very thorough medical examinations, were tested in Johannesburg, and 23 per cent. showed a strongly positive blood reaction (Wasserman). An interesting feature in connection with Syphilis among the natives is the relatively small number of Neuro-Syphilitic cases. There were only 7 cases of Locomotor Ataxia and 3 cases of General Paralysis of the Insane. This phenomenon is not peculiar to Bechuanaland and has been observed in other native areas where Syphilis is widespread. The suggestion that Malaria may contribute to the small number of Neuro-Syphilitics cannot be sustained, as the same thing is observed in Basutoland where the Syphilitic incidence is equally high and where Malaria does not exist.



As regards treatment, Pot. Iodid, and Mercury continue to be the drugs most generally used in the form of "Mist Specific." N.A.B., on account of the price, has to be reserved for the more urgent cases, but is very popular, the natives frequently asking the Doctors for an intravenous injection of it as a "blood purifier" even though they may show no signs of disease. Bismuth in the form of Sodium Bismuth Tartrate has been given a fair trial, but all the Medical Officers report that, owing to the pain produced by its intramuscular injection, patients refuse to return for treatment and indeed prefer to suffer from the disease than submit to the pain. Dr. Gerber, Medical Officer at Selika, reports: "For the past few months one has used a Bismuth preparation, "Sobita" (Sodium-Bismuth-Tartrate) for the injection treatment of Syphilis, and with very excellent results. It was endeavoured, as far as possible, to give a course of six injections of this drug, giving one injection every second day. These injections are exceedingly painful and although the native will sometimes refuse to have more than two or three on account of the pain, it was found that a little sympathy and gentle persuasion would very often make him change his mind and allow one to carry on with the full course of six injections. The only complication of Sobita treatment which approaches to anything near gravity has been Stomatitis due to Bismuth poisoning or intolerance, and although observers who have used this drug in other Territories make light of the occurrence of this complication, one has found that it occurs all too frequently and very often has caused the suspension of the treatment for a week or more. Natives with carious teeth and poor condition of the gums are very prone to develop Stomatitis after the second injection of Sobita. It can be stated as almost a general rule that if they have not developed this complication by the time they are due to have the third injection the chance of their developing it during the remainder of the course of treatment is very small. Where the native has good teeth, the danger of Bismuth Stomatitis occurring is not so great."

*Gonorrhœa* was responsible for 472 attendances as compared with 116 in 1929. But as one Medical Officer remarks, the incidence is much higher than these figures indicate, it being considered by the native as so insignificant a disease as not worth worrying about or continuing efficient treatment—indeed many of the natives believe that most male children are born with it.

Free treatment for Venereal cases is given by all Government Medical Officers and subsidised Medical Missionaries, the cost of which is borne by the Administration.

*Tuberculosis*.—Comment is necessary. 165 cases are reported of which 106 were Pulmonary, as against 22 last year and 37 in 1928. The comparison cannot be taken as an absolute increase of the disease as certain cases are known to go from one doctor to another and be recorded as a new case. Nevertheless, it shows the need for vigilance. One Medical Officer comments that active Pulmonary Tuberculosis had been noticed in several cases as a sequel to Influezal-Broncho-Pneumonia in men who, some years previously, had worked on the Mines.

*Smallpox*.—There was no outbreak of the virulent form, but in the Francistown area there were three small outbreaks of *Alastrim*, and at Mochudi 2 cases without any deaths. Vaccination and quarantine rapidly controlled the epidemics. The Medical Officer, Francistown, finds that owing to the mildness of the disease, the natives are very indifferent as regards reporting an occurrence or observing quarantine, and his opinion is that so long as the disease continues in its mild state quarantine should not be enforced, because it is so strongly objected to that if the virulent form should break out the tendency would be to hide the cases. 2,300 Vaccinations of contacts were performed.

*Cerebro-Spinal-Meningitis*.—Two cases occurred at Mochudi, and none in Ngamiland where, in 1929, there was a fairly extensive outbreak.

*Influenza*.—In October there was a generalized occurrence; 762 cases were attended, the most serious outbreaks being at Serowe and in the Gaberones District. The Medical Officers consider that the cases actually brought to their notice represent a fraction of all people affected and that they were unable to estimate the death rate, though at Serowe village Dr. Morgan who tried, and failed, to ascertain the number of deaths, was reliably informed that there were approximately 12 burials a day for a period of 2 weeks. Fortunately at no other centre was the type so virulent.



*Malaria*.—The incidence this year, in respect of total attendances, has dropped to 4·73 per cent. from 11·53 per cent. in 1929. This reduction can only be accepted as relative and not absolute because of the larger proportion of Syphilitic cases, but it helps to bear out the statement of all Medical Officers that there have been far fewer newly-infected Malarial cases in 1930 than in preceding years, and, as indicated, earlier in this section of the Report, it is due to the lower rainfall and a diminution of collections of surface water generally. The one exception to this is Ngamiland where the cases of Malaria were 14·5 per cent. of the total number of cases seen by the Medical Officer—the reason for this being that most of the villages are situated along river banks and swamps which are more or less permanent, thus affording abundant breeding places for Anopheles. At Maun the splenic index for all persons is 30 per cent. An interesting observation made at Maun is that a European trader living in the native village has comparatively few mosquitoes in contrast to the myriads invading Officials' quarters, the reason apparently being that there are no inhabitants or stables between the breeding site (the Tamalikane River) and the Officials' residences, whereas between the trader and the river there is a row of native huts—in which are to be found many mosquitoes. Thus, instead of an “ animal screen ” one has a “ human screen.” The breeding places are so extensive that expense precludes any question of antilarval measures. During the month of April, Dr. Mackintosh, by the kind permission of the Director of Public Health, Union of South Africa, was able to obtain instruction in Malariology with the Malarial Unit working in Natal.

*Plague*.—Vigilance as regards rodent plague was maintained along the South-Eastern borders, but there was no evidence of its occurrence nor were there any cases of human plague.

*Enteric Fever*.—As in former years, this group of diseases did not affect the Territory. Only two cases were reported during the year. These are known to have been contracted outside the Protectorate.

*Tetanus*.—There was one case which occurred in a prisoner at Serowe, and despite the exhibition of antitetanic serum, it proved rapidly fatal. This is only the second case over a period of three years.

*Helmanthic Disease*.—Intestinal Parasites including Cestodæ (Tænia), Ascaris and Oxyuris, account for 55 attendances. No case of Ankylostomiasis was observed.

*Bilharzia*.—Only 6 cases were reported in 1930 as against 25 in 1929. This diminution is probably due to the efforts of the Resident Magistrate, Lobatsi, in forbidding bathing in a certain water course where the source of infection was suspected.

Vital statistics cannot be drawn up as no data are available. Attempts have been made by Medical Officers to obtain information from tribal Chiefs, regarding birth and death rates, but the information given them is so incorrect as to be valueless.

### SECTION III.—HYGIENE AND SANITATION.

Courses in Hygiene and elementary Physiology were given at The National School at Mochudi. At Serowe the Medical Officer, Dr. Morgan, conducted a series of lectures to the native women on infant welfare and general hygiene. The average attendance of 150 per session surpassed expectations and at the end of each lecture an hour was spent answering questions put by the women, most of whom were uneducated. These questions indicated very deep-rooted superstitions and strange customs. At the end of the series of lectures an examination was held at which the writer was present, and considering that all the knowledge had been given “ viva voce,” without the aid of pamphlets or books for students, the answers showed how much they had been interested. Prizes were distributed to the three best candidates. The need for more work of this kind is clearly indicated and the scheme, with suitable pamphlets, will be pursued as time and opportunity permit.

The physique of the Bechuana, as compared with that of the South African Tribes generally, is noticeably poor. The reason for this is frequently ascribed to Malaria and Syphilis. While not denying that these are contributing factors, certain observations have led to the conclusion that the principal cause is improper dieting resulting from the custom of the Bechuana of living in large villages round their tribal Chief and having their cattle posts and agricultural fields many miles away in charge of their Masarawa (unpaid servants). With the exception of



the Chief and a few Headmen who can graze their cattle near the native township it is next to impossible for the bulk of the population to obtain milk except during three months of the year at most, when the women and children migrate to the "lands" to plough, sow, weed and harvest their crops. Thus, from the time a child is weaned its diet during three quarters of the year consists of little else than Mealie Meal (Maize), and Kaffir Corn (Millet) porridge—the effect being very marked at the ages from five to twelve years, when the special bodily feature is a protuberant belly, frequently accompanied by an umbilical hernia, while the rest of the body is devoid of the normal adipose tissue and skeletal covering that goes with a properly fed child. What hope is there for the physique of the adults with such a handicap during the development period?

The villages (or townships) consist of huts more or less crowded round the Chief's domicile and radiating up to a mile or more, the water supply being deep wells from which the water is laboriously drawn up by hand with rope and bucket, and the quantity is merely sufficient for drinking and cooking. Under such conditions it is impossible to expect vegetable or fruit gardens to be cultivated. Meat, which at one time was easily obtained by hunting, is now more or less a luxury, as the game, which used to be abundant, has been largely killed off or driven to the uninhabited parts of the Kalahari; and as a native's herd of cattle represents his banking account a beast is slaughtered for food only on very special occasions. Altogether, the diet of the Bechuana from infancy and through adult life is so deficient in nitrogenous and vitamin content that the main reason for their poor physique is not far to seek, and it is this poor constitution that makes them easy prey to Syphilis, Malaria, Respiratory and other diseases. The only remedy is to induce the Chiefs and tribes to dissolve these large villages into hamlets near the cattle posts and cultivated lands where there are vast areas totally uninhabited, with excellent pasture lands; and by education to teach the natives the necessity of a better balanced diet with a proper vitamin content. This can only be a slow process owing to the general antipathy towards any innovations in old-established tribal customs and habits. This question of inferior physique as it affects the Bechuana tribe requires further investigation in as much as many natives of other parts of South Africa are—for economic reasons—likely to suffer from a similarly defective diet and with a resulting physical deterioration, *e.g.*, the Basuto,

The sanitation of Government stations, though simple, is on the whole satisfactory. Water supplies for Officials are being improved. Generally, they are far from adequate. At Selika, the Magisterial Headquarters for the Tuli Block, all water for domestic purposes has to be carried 12 miles in water-carts. At what was considered a suitable place for boring, fruitless attempts were made to obtain a good supply and recommendations have been submitted to remove the camp to a more healthy situation where good water has been obtained.

Officials' quarters in Ngamiland are most unhygienic and urgently require reconstruction. They are situated on a riverbank and are built of raw brick and covered with thatch on rough poles, without ceilings. Much gauze has been wasted in futile attempts to make them mosquito proof. Instead of keeping out mosquitoes, the thatch roofs provide suitable cover where mosquitoes harbour throughout the year and are a serious source of infection. As a "pis aller" until suitable quarters can be afforded, wire gauze cages, constructed of simple wooden frames (12 ft. by 7½ ft. by 6½ ft.) covered completely with mosquito proof wire gauze, and with suitable doors attached, were this year supplied; three to senior and two to junior Officials, to serve as living rooms and bedrooms, and placed on the verandahs. They have answered the purpose admirably, at no great expense, and now those Officials whose lives during the Summer months were rendered almost unbearable in the evenings owing to mosquitoes, thousands of moths and flying insects, can enjoy their evenings and nights' sleep with absolute immunity from these pests.

No progress has been made in the direction of sanitation among the natives and until they can be educated sufficiently to appreciate the need, it is considered wise not to attempt any compulsory measures. Their faith in superstition and witchcraft is so strong that at present the aim of the Administration must be so to win their confidence through our Hospitals and Dispensaries that in time they will accept and apply the advice and lessons that are given to them in schools and otherwise. Results must necessarily be slow as they will depend to a large extent on the lead given by tribal Chiefs, most of whom are conservative—indeed reactionary—where their native customs and habits are concerned.



#### SECTION IV.—HOSPITALS AND DISPENSARIES

*Dispensaries.*—The work of the Dispensaries still constitutes the major portion of the medical activities. During the year there were 29,483 new attendances and 36,195 total attendances, an increase of 11,770 over the figures for 1928 and 19,245 over those for 1929. New Dispensary buildings were erected at Francistown and Lobatsi. Those at Serowe, Maun and Selika are very primitive and constitute a serious handicap to the Medical Officers. When funds permit new Dispensaries will have to be constructed at these latter stations. The application of a 1s. charge for non-Venereal attendances cannot yet be rigidly enforced, but it is hoped eventually to defray the cost of drugs from this small Outpatient fee. Actually for the calendar year 1930 approximately £300 was realised from this source.

The classification of Diseases for Outpatients is shown in Appendix B.

*Hospitals.*—The temporary Hospitals at Gaberones, Francistown and Serowe continued to serve a useful purpose for the treatment of a certain number of the more serious cases. At Mafeking the Victoria Hospital has been used for most of the complicated or surgical cases of the Protectorate, these cases being attended to by the Principal Medical Officer.

*The Sekgoma Memorial Hospital, Serowe.* though completed at the end of 1929, was not able to admit patients as the water supply originally found, which barely gave a margin for safety, had diminished greatly and it was necessary to sink another borehole. This was done in December and the total supply thus obtained is more than ample, is of excellent quality, and will permit of the Hospital functioning early in 1931.

*The Athlone Hospital, Lobatsi.*—The Foundation Stone was laid by His Excellency the Earl of Athlone, K.G., G.C.B., G.C.M.B., etc., on the 7th October, 1929. On the 17th September, 1930, the opening ceremony being performed by His Honour Lieut.-Col. C. F. Rey, Resident Commissioner, in the presence of a large number of Europeans and Natives resident in the Protectorate and from the Union. Among the latter was the President of the Federal Council of the Medical Association of South Africa (B.M.A.), Dr. Orenstein, C.M.G. An informal visit was graciously paid to the Hospital by Lord Athlone on the 10th December when he passed through Lobatsi on his departure from South Africa.

The first patient was admitted on the day before the opening ceremony, and four weeks later every native bed was occupied. The first surgical operation was performed a week after the opening of the Hospital. Owing to the large number of native patients requiring attention, in November six additional beds were provided for natives, and these were immediately occupied by cases which had previously been lying on mattresses on the floor.

The Hospital has now four European private rooms, a room allocated for Native Chiefs, and 18 native beds in the two general wards. The largest number of patients in Hospital at one time was 23.

The nursing Staff at the end of the year consisted of:—

- 4 European Nurses,
- 2 Native male probationer Nurses,
- 2 Native female probationer Nurses.

It was found necessary to increase the European nursing staff of two very shortly after the opening of the Hospital, owing mainly to the facts that the Hospital admits both European and Native patients; that major surgery was embarked on at once; and that the native staff was untrained. The present staff is adequate and working well. The native probationers are showing great keenness. They are receiving demonstrations and instruction in practical nursing, but as yet no definite course of training has been mapped out for them. Great credit is due to the Medical Officer, Dr. Henderson, and the Sister in Charge, Miss Verney, for the organisation within the Hospital and for the harmony and efficiency with which the staff are carrying out their duties.

During the three months ending 31st December, 13 European and 54 Native patients were admitted—a total of 67. 36 Operations were performed (9 Europeans and 25 Natives) of which 8 were major operations.

European Inpatients are charged a comprehensive maintenance fee of 12s. 6d. per diem, but in many cases this charge is partly or wholly remitted, according to the ability of the patient to pay. All native patients resident in the Protectorate are treated free of any charge whatsoever.

Lighting is electric and in due course an X-Ray plant will be installed. Sewage is dealt with by a septic tank.

The total admissions to Hospitals for the year were 291 with 22 deaths, made up as follows :—

Victoria Hospital, Mafeking	...	...	...	...	...	33
Athlone Hospital, Lobatsi (3 months)	...	...	...	...	...	67
Gaberones Temporary Hospital (6 months)	...	...	...	...	...	19
Serowe Temporary Hospital	...	...	...	...	...	114
Francistown Temporary Hospital	...	...	...	...	...	58

the diseases and operations performed being classified in Appendix II and Appendix III respectively.

#### SECTION V.—PRISONS AND ASYLUMS.

The health of the prisoners throughout the year was good. As in previous years, a small proportion, after three or four months' imprisonment, showed a tendency to Scurvy. By a modification of the diet scale and introduction of germinated peas and beans when fresh vegetables could not be obtained, the tendency was controlled. Generally the worst cases of Scurvy in prisoners occur in Bushman or Bakalagadi from the Kalahari. So much of their food consists of fresh berries and roots, and their resistance is so low that they are particularly liable to the condition when they are imprisoned and fed on ordinary gaol rations.

For financial reasons no Mental Hospitals have been established in the Territory, most cases of insanity being of a benign nature; and where homicidal or suicidal tendencies are manifest the patients are sent for treatment to the Union Mental Hospitals.

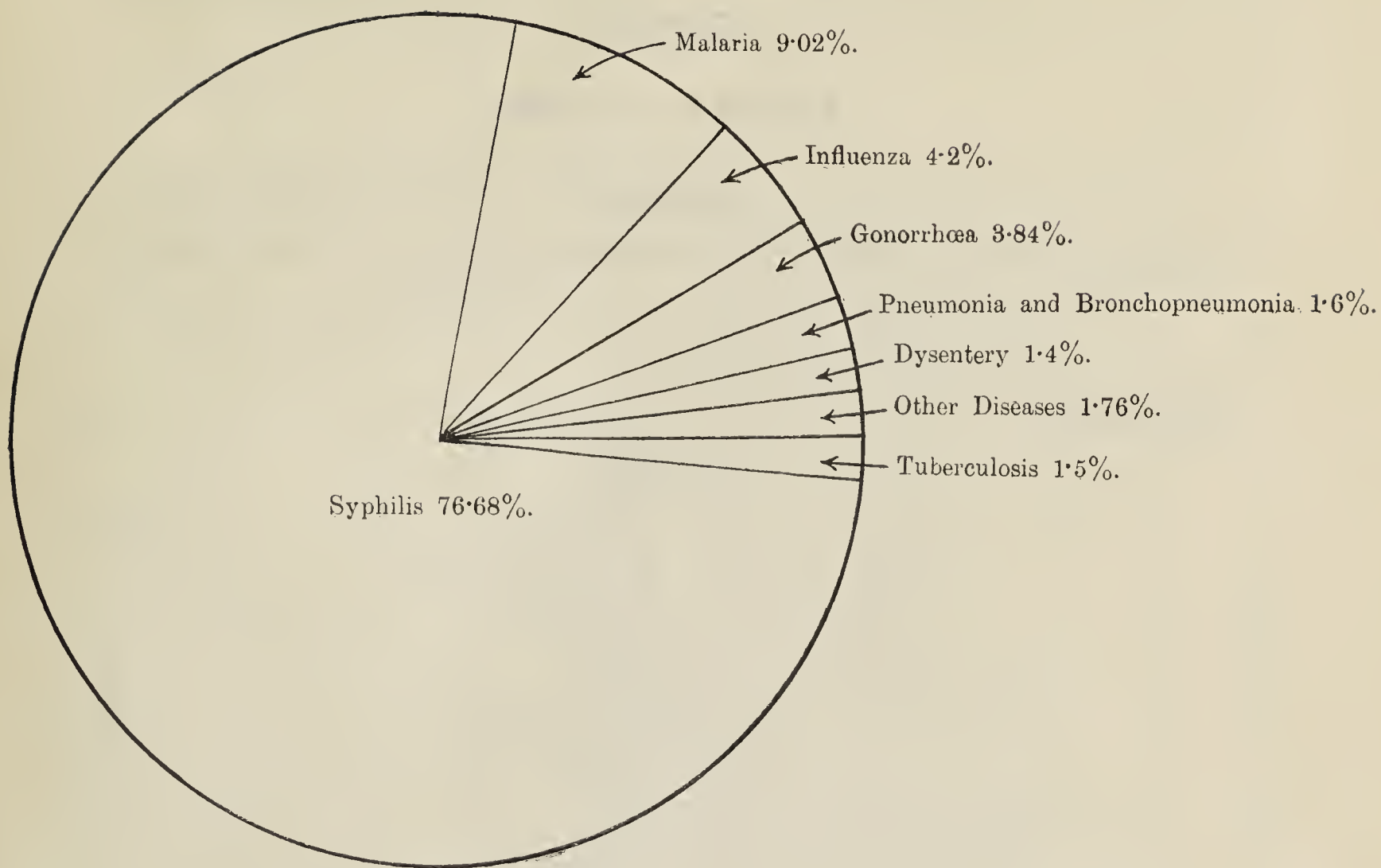
H. W. DYKE.

*Principal Medical Officer.*

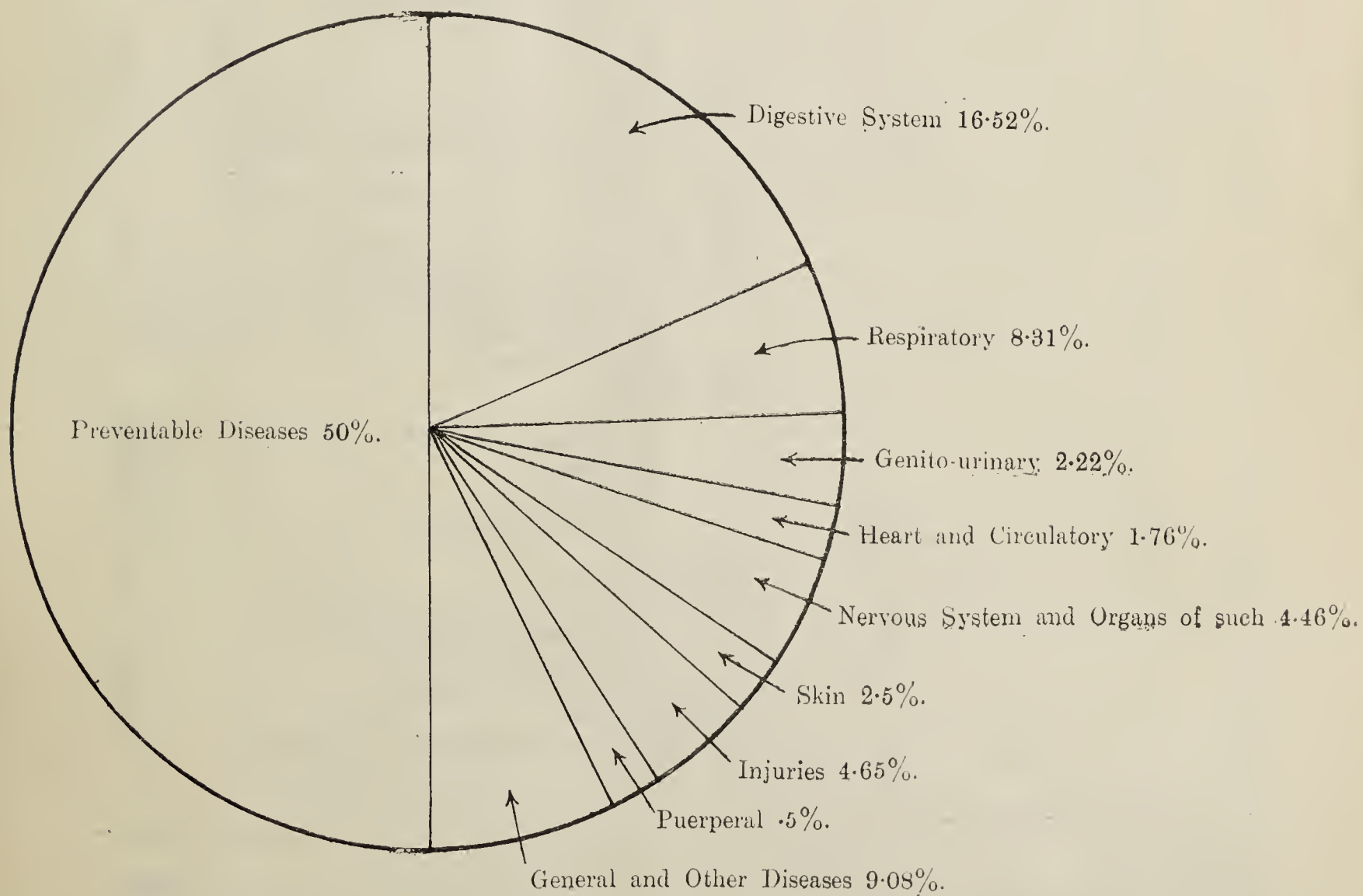


## DIAGRAMS OF INFECTIVE DISEASES.

TOTAL INCIDENCE—14,771.



TOTAL FIRST ATTENDANCES—29,488.



# APPENDIX I.

Outpatients for the year 1930.

## DISPENSARIES.

Diseases by Systems or Groups.	Nos.	Principal Diseases.	Nos.
I. Epidemic, Endemic and Infectious Diseases.	14,864	1. Enteric Group : (a) Typhoid Fever ... .. 3 3. Relapsing Fever ... .. 1 5. Malaria : (a) Tertian } ... .. 1,368 (b) Quartan } (c) Aestivo-autumnal } (d) Cachexia ... .. 60 (e) Blackwater ... .. 1 6. Smallpox : Alastrim ... .. 22 7. Measles ... .. 107 9. Whooping Cough ... .. 229 10. Diphtheria ... .. 2 11. Influenza ... .. 762 13. Mumps ... .. 3 16. Dysentery : (a) Amœbic ... .. 6 (c) Undefined or due to other causes... 149 20. Leprosy ... .. 6 24. Epidemic Cerebro-spinal Fever ... .. 2 25. Other Epidemic Diseases : (a) Rubeola (German Measles) ... .. 7 (b) Varicella (Chicken Pox) ... .. 7 (g) Yaws... .. 27 29. Tetanus ... .. 2 31. Tuberculosis, Pulmonary and Laryngeal 106 32. Tuberculosis of the Meninges or Central Nervous System ... .. 2 33. Tuberculosis of the Intestines or Peritoneum ... .. 5 35. Tuberculosis of Bones and Joints ... .. 30 36. Tuberculosis of other Organs : (c) Lymphatic System ... .. 20 (d) Genito-urinary ... .. 1 (e) Other Organs ... .. 1 38. Syphilis : (a) Primary ... .. 92 (b) Secondary ... .. 1,132 (c) Tertiary ... .. 9,199 (d) Hereditary ... .. 466 (e) Period not indicated ... .. 433 39. Soft Chancre ... .. 16 40. (a) Gonorrhœa and its complications 472 (b) Gonorrhœal Ophthalmia ... .. 9 (c) Gonorrhœal Arthritis ... .. 36 (d) Granuloma Venereum ... .. 53 41. Septicæmia ... .. 27 42. Other Infectious Diseases—Trypanosomiasis ... .. —	
Carried forward ... ..	14,864		14,864



Diseases by Systems or Groups.	Nos.	Principal Diseases.	Nos.
Brought forward ... ..	14,864		14,864
<b>II. General Diseases not mentioned above.</b>	2,071	43. Cancer or other Malignant tumours of the Buccal Cavity ... .. 1 44. Cancer or other Malignant tumours of the Stomach or Liver ... .. 3 45. Cancer or other Malignant tumours of the Peritoneum Intestines, Rectum ... 5 46. Cancer or other Malignant tumours of the Female Genital organs ... .. 3 47. Cancer or other Malignant tumours of the Breast ... .. 6 48. Cancer or other Malignant tumours of the Skin ... .. 1 49. Cancer or other Malignant tumours of Organs not specified ... .. 5 50. Tumours, non-malignant ... .. 60 51. Acute Rheumatism ... .. 84 52. Chronic Rheumatism ... .. 743 53. Scurvy, including Barlow's Disease ... 72 56. Rickets ... .. 43 57. Diabetes (not including Insipidus) ... 25 58. Anæmia : (a) Pernicious ... .. — (b) Other Anæmias and Chlorosis ... 109 59. Diseases of the Pituitary Body ... .. 3 60. Diseases of the Thyroid Gland : (a) Exophthalmic Goitre ... .. 1 (b) Other Diseases of the Thyroid Gland, Myxœdema ... .. 4 61. Diseases of the Para-Thyroid Glands ... 1 64. Diseases of the Spleen ... .. 1 65. Leukæmia : (a) Leukæmia ... .. 3 (b) Hodgkin's Disease ... .. 8 66. Alcoholism ... .. 12 69. Other General Diseases : Auto-intoxication ... .. 871 Purpura Hæmorrhagica ... .. 6 Hæmophilia ... .. 1	
<b>III. Affections of the Nervous System and Organs of the Senses.</b>	1,014	72. Locomotor Ataxia ... .. 7 73. Other affections of the Spinal Cord ... 3 74. Apoplexy : (a) Auemorrhage ... .. 5 (b) Embolism ... .. 3 (c) Thrombosis ... .. 2 75. Paralysis : (a) Hemiplegia ... .. 10 (b) Other Paralyzes ... .. 37 76. General Paralysis of the Insane ... .. 3 77. Other forms of Mental Alienation ... 28 78. Epilepsy ... .. 39 79. Eclampsia, Convulsions (non-puerperal), 5 years or over ... .. 5 80. Infantile Convulsions ... .. 11 81. Chœra ... .. 3 82. (a) Hysteria ... .. 10 (b) Neuritis ... .. 73 (c) Neurasthenia ... .. 15	
Carried forward ... ..	17,949		17,189

Diseases by Systems or Groups.	Nos.	Principal Diseases.	Nos.
Brought forward ... ..	17,949		17,189
<b>III. Affections of the Nervous System and Organs of the Senses.—continued.</b>		84. Other affections of the Nervous System, such as Paralysis Agitans ... ..	4
		85. Affections of the Organs of Vision :	
		(a) Diseases of the Eye ... ..	24
		(b) Conjunctivitis ... ..	434
		(c) Trachoma ... ..	33
		(d) Tumours of the Eye ... ..	1
		(e) Other affections of the Eye ... ..	80
		86. Affections of the Ear or Mastoid Sinus ... ..	184
<b>IV. Affections of the Circulatory System.</b>	481	87. Pericarditis ... ..	2
		88. Acute Endocarditis or Myocarditis ... ..	22
		89. Angina Pectoris ... ..	5
		90. Other Diseases of the Heart :	
		(a) Valvular :	
		Mitral ... ..	117
		Aortic ... ..	80
		Pulmonary ... ..	11
		(b) Myocarditis ... ..	29
		91. Diseases of the Arteries :	
		(b) Arterio-Sclerosis ... ..	5
		92. Embolism or Thrombosis (non-cerebral)	1
		93. Diseases of the Veins :	
		Hæmorrhoids ... ..	22
		Varicose Veins ... ..	13
		94. Diseases of the Lymphatic System :	
		Lymphangitis ... ..	52
		Lymphadenitis, Bubo (non-specific) ... ..	98
		95. Hæmorrhage of undetermined cause ... ..	15
		96. Other affections of the Circulatory System ... ..	9
<b>V. Affections of the Respiratory System.</b>	2,721	97. Diseases of the Nasal Passages :	
		Adenoids... ..	16
		Polypus ... ..	2
		Rhinitis ... ..	34
		Coryza ... ..	956
		98. Affections of the Larynx :	
		Laryngitis ... ..	29
		99. Bronchitis :	
		(a) Acute ... ..	552
		(b) Chronic ... ..	522
		100. Broncho-Pneumonia ... ..	62
		101. Pneumonia :	
		(a) Lobar ... ..	119
		102. Pleurisy, Empyema ... ..	30
		105. Asthma ... ..	41
		107. Other affections of the Lungs ... ..	358
<b>VI. Diseases of the Digestive System.</b>	4,921	108. (a) Diseases of Teeth or Gums :	
		Caries, Pyorrhœa, etc. ... ..	866
		(b) Other affections of the Mouth :	
		Stomatitis ... ..	91
		Glossitis, etc. ... ..	1
		109. Affections of the Pharynx or Tonsils :	
		Tonsillitis ... ..	231
		Pharyngitis ... ..	68
Carried forward ... ..	26,072		22,408

Diseases by Systems or Groups.	Nos.	Principal Diseases.	Nos.
Brought forward ... ..	26,072		22,408
<b>VI. Diseases of the Digestive System.</b> — <i>continued.</i>		110. Affections of the Oesophagus ... ..	2
		111. (a) Ulcer of the Stomach ... ..	5
		(b) Ulcer of the Duodenum ... ..	3
		112. Other affections of the Stomach :	
		Gastritis ... ..	110
		Dyspepsia, etc. ... ..	676
		113. Diarrhoea and Enteritis :	
		Under two years ... ..	316
		114. Diarrhoea and Enteritis :	
		Two years and over ... ..	286
		Colitis ... ..	16
		Ulceration ... ..	20
	—	116. Diseases due to Intestinal Parasites :	
		(a) Cestoda (Tænia) ... ..	37
		(c) Nematoda (other than Ankylos- toma):	
		Ascaris ... ..	11
		Oxyuris ... ..	9
		(e) Other Parasites ... ..	5
		117. Appendicitis ... ..	27
		118. Hernia ... ..	18
		119. Affections of the Anus, Fistula, etc. ...	10
		Other affections of the Intestines :	
		Enteroptosis ... ..	20
		Constipation ... ..	2,008
		122. Cirrhosis of the Liver :	
		(a) Alcoholic ... ..	2
		(b) Other forms ... ..	1
		123. Biliary Calculus ... ..	7
		124. Other affections of the Liver :	
		Abscess ... ..	4
		Hepatitis ... ..	27
		Cholecystitis ... ..	10
		Jaundice ... ..	15
		127. Other affections of the Digestive System	19
<b>VII. Diseases of the Genito- urinary System (non-Vene- real).</b>	829	128. Acute Nephritis ... ..	15
		129. Chronic ... ..	19
		130. Schistosomiasis ... ..	6
		131. Other affections of the Kidneys :	
		Pyelitis, etc. ... ..	13
		132. Urinary Calculus ... ..	1
		133. Diseases of the Bladder :	
		Cystitis ... ..	60
		134. Diseases of the Urethra :	
		(a) Stricture ... ..	11
		135. Diseases of the Prostate :	
		Hypertrophy ... ..	5
		Prostatitis ... ..	1
		136. Diseases (non-Venereal) of the Genital Organs of Man :	
		Orchitis ... ..	9
		Hydrocele ... ..	7
		137. Cysts or other non-malignant Tumours of the Ovaries ... ..	12
		138. Salpingitis :	
		Abscess of the Pelvis ... ..	17
		139. Uterine Tumours (non-malignant) ...	7
Carried forward ... ..	26,901		26,255



Diseases by Systems or Groups.	Nos.	Principal Diseases.	Nos.
Brought forward ... ..	26,901		26,255
<b>VII. Diseases of the Genito- urinary System (non-Vene- real).—continued.</b>		140. Uterine Hæmorrhage (non-puerperal) 21 141. (a) Metritis ... .. 26 (b) Other Affections of the Female Genital Organs : Displacement of Uterus ... .. 124 Amenorrhœa ... .. 54 Dysmenorrhœa ... .. 245 Leucorrhœa ... .. 147 142. Diseases of the Breast (non-puerperal) : Mastitis ... .. 19 Abscess of Breast ... .. 8 Sterility ... .. 2	
<b>VIII. Puerperal State.</b>	174	143. (a) Normal Labour ... .. 76 (b) Accidents of Pregnancy ... .. 36 (c) Other accidents of Pregnancy ... .. 44 144. Puerperal Hæmorrhage ... .. 1 145. Other accidents of Parturition ... .. 4 146. Puerperal Septicæmia ... .. 6 149. Sequelæ of Labour ... .. 1 150. Puerperal affections of the Breast ... .. 6	
<b>IX. Affections of the Skin and Cellular Tissues.</b>	718	152. Boil ... .. 93 Carbuncle ... .. 4 153. Abscess : Whitlow ... .. 61 Cellulitis ... .. 67 154. (a) Tinea ... .. 18 (b) Scabies ... .. 28 155. Other Diseases of the Skin : Urticaria ... .. 80 Eczema ... .. 339 Herpes ... .. 17 Psoriasis ... .. 7 Tropical Ulcer ... .. 4	
<b>X. Diseases of Bones and Organs of Locomotion (other than Tuberculous).</b>	188	156. Diseases of Bones : Osteitis ... .. 15 157. Diseases of Joints : Arthritis ... .. 62 Synovitis ... .. 83 158. Other Diseases of Bones or Organs of Locomotion ... .. 28	
<b>XI. Malformations.</b>	3	159. Malformations : Spina Bifida, etc. ... .. 1 Phymosis ... .. 2	
<b>XII. Diseases of Infancy ...</b>	6	162. Other affections of Infancy ... .. 6	
<b>XIII. Affections of old age ...</b>	20	164. Senility— Senile Dementia ... .. 20	
Carried forward ... ..	28,010		28,010

Diseases by Systems or Groups.	Nos.	Principal Diseases.	Nos.
Brought forward :—	28,010		28,010
<b>XIV. Affections produced by External Causes.</b>	1,362	168. Suicide by Hanging or Strangulation ... 1 170. Suicide by Firearms ... .. 2 176. Attacks of poisonous animals— Snake Bite ... .. 7 Insect Bite ... .. 5 177. Other accidental Poisonings ... .. 14 178. Burns (by fire) ... .. 129 179. Burns (other than by fire) ... .. 93 180. Suffocation (accidental) ... .. 8 183. Wounds (by firearms, war excepted) ... 4 184. Wounds (by cutting or stabbing instruments) ... .. 747 185. Wounds (by fall) ... .. 58 186. Wounds (in Mines or Quarries) ... 2 188. Wounds (crushing, <i>e.g.</i> , Railway accidents, etc.)... .. 13 189. Injuries inflicted by animals, (Bites, Kicks, etc.) ... .. 87 192. (A) Over fatigue ... .. 1 (B) Hunger or thirst ... .. — 194. Exposure to heat— Heatstroke ... .. 4 Sunstroke ... .. 1 198. Murder by cutting or stabbing instruments ... .. 5 201. A. Dislocation ... .. 14 B. Sprain ... .. 68 C. Fracture ... .. 51 202. Other External Injuries ... .. 47 203. Deaths by violence or unknown cause ... 1	
<b>XV. Ill-defined Diseases</b> ...	73	205. Diseases not already specified or ill-defined— A. Ascites ... .. 2 Oedema ... .. 13 Asthenia ... .. 41 Shock ... .. 1 Hyperpyrexia ... .. 1 B. Malingering ... .. 15	
<b>XVI. Diseases, the total of which have not caused 10 deaths.</b>	38	... .. 38	
Total ... ..	29,483		29,483



## APPENDIX II.

### Return of Diseases and Deaths—In Patients—for the Year 1930.

Diseases.	Remaining in Hospital 1930.	Yearly Total.		Total Cases Treated.	Remaining in Hospital 1931.
		Admissions.	Deaths.		
<b>I. Epidemic, Indemic and Infectious Diseases.</b>					
1. Enteric Group—					
(a) Typhoid Fever ... ..	—	1	—	1	—
3. Relapsing Fever ... ..	1	—	—	1	—
5. Malaria—					
(a) Tertian ... ..	—	2	—	2	—
(c) Aestivo-autumnal ... ..	—	3	—	3	—
9. Whooping Cough ... ..	—	1	1	1	—
11. Influenza ... ..	—	1	—	1	—
16. Dysentery—					
(b) Bacillary ... ..	—	3	—	3	—
(c) Undefined or due to other causes	—	2	1	2	1
24. Epidemic Cerebro-spinal Fever ...	—	1	—	1	—
29. Tetanus ... ..	—	1	1	1	—
31. Tuberculosis, Pulmonary and Laryngeal ... ..	—	3	—	3	—
35. Tuberculosis of Bones and Joints ...	—	1	—	1	—
36. Tuberculosis of other Organs—					
(c) Lymphatic System ... ..	—	2	—	2	—
38. Syphilis—					
(b) Secondary ... ..	—	1	—	1	—
(c) Tertiary ... ..	—	13	1	13	3
(d) Hereditary ... ..	—	2	—	2	2
<b>II. General Diseases not mentioned above.</b>					
44. Cancer or other malignant Tumours of the Stomach or liver ... ..	—	1	1	1	—
47. Cancer or other malignant Tumours of the Breast ... ..	—	1	—	1	—
48. Cancer or other malignant Tumours of the Skin ... ..	—	2	2	2	—
49. Cancer or other malignant Tumours of organs not specified ... ..	—	2	—	2	—
50. Tumours (non-Malignant) ... ..	—	2	—	2	1
52. Chronic Rheumatism ... ..	—	1	—	1	—
53. Scurvy (including Barlow's Disease)	1	4	—	5	—
<b>III. Affections of the Nervous System and     Organs of the Senses.</b>					
75. Paralysis—					
(a) Hemiplegia ... ..	—	1	—	1	1
82. A. Hysteria ... ..	—	1	—	1	1
85. Affections of the Organs of Vision—					
(a) Diseases of the Eye ... ..	—	1	—	1	—
(b) Conjunctivitis ... ..	—	1	—	1	—
(c) Trachoma ... ..	—	1	—	1	—
(e) Other affections of the Eye ...	—	1	—	1	—
Carried forward ... ..	2	56	7	58	9

Diseases.	Remaining in Hospital 1930.	Yearly Total.		Total Cases Treated.	Remaining in Hospital 1931.
		Admissions.	Deaths.		
Brought forward ... ..	2	56	7	58	9
<b>IV. Affections of the Circulatory System.</b>					
87. Pericarditis ... ..	—	1	—	1	—
88. Acute Endocarditis or Myocarditis ...	—	3	1	3	—
90. Other Diseases of the Heart—					
(a) Mitral ... ..	—	2	2	2	—
95. Hæmorrhage of undetermined cause	—	1	—	1	—
<b>V. Affections of the Respiratory System.</b>					
97. Diseases of the Nasal Passages—					
Coryza ... ..	—	1	—	1	—
99. Bronchitis—					
(a) Acute ... ..	—	1	—	1	—
100. Broncho-Pneumonia ... ..	—	1	—	1	1
101. Pneumonia—					
(a) Lobar ... ..	—	8	1	8	1
102. Pleurisy, Empyema ... ..	—	3	—	3	1
107. Other Affections of the Lungs—					
Pulmonary Spirochætosis ...	—	1	—	1	—
Pneumothorax ... ..	—	1	—	1	—
Hæmothorax ... ..	—	1	—	1	—
<b>VI. Diseases of the Digestive System.</b>					
108. A. Diseases of Teeth and Gums—					
Caries, Pyorrhœa, etc. ... ..	—	3	—	3	—
109. Affections of the Pharynx or Tonsils...	—	5	—	5	—
114. Diarrhœa and Enteritis—					
Two years and over ... ..	—	2	—	2	—
116. Diseases due to Intestinal Parasites—					
(a) Cestoda (Tænia) ... ..	—	1	—	1	—
117. Appendicitis ... ..	—	5	—	5	—
118. Hernia ... ..	—	1	—	1	—
119. A. Affections of the Anus, Fistula, etc. ... ..	—	1	—	1	—
B. Other Affections of the In- testines—					
Enteroptosis ... ..	—	1	—	1	1
Constipation ... ..	—	1	—	1	—
124. Other Affections of the Liver—					
Abscess ... ..	—	3	1	3	1
Hepatitis ... ..	—	1	—	1	—
Cholecystitis ... ..	—	1	—	1	—
Jaundice ... ..	1	—	—	1	—
126. Peritonitis (of unknown cause) ...	—	1	1	1	—
Carried forward ... ..	3	106	13	109	14

Diseases.	Remaining in Hospital 1930.	Yearly Total.		Total Cases Treated.	Remaining in Hospital 1931.
		Admissions.	Deaths.		
Brought forward ... ..	3	106	13	109	14
<b>VII. Diseases of the Genito-Urinary System (Non-Venereal).</b>					
128. Acute Nephritis ... ..	—	1	1	1	—
129. Chronic ... ..	—	3	1	3	—
131. Other Affections of the Kidneys— Pyelitis, etc. ... ..	—	1	—	1	—
134. Diseases of the Urethra— (a) Stricture ... ..	—	3	—	3	—
136. Diseases (non-Venereal) of the Genital Organs of Man—					
Epididymitis ... ..	—	1	—	1	—
Phymosis ... ..	—	2	—	2	—
137. Cysts or other non-malignant Tumours of the Ovaries ... ..	—	3	—	3	—
138. Salpingitis—					
Abscess of the Pelvis ... ..	—	1	—	1	1
139. Uterine Tumours (non-malignant) ...	—	1	—	1	—
141. A. Metritis ... ..	—	1	—	1	—
B. Other Affections of the Female Genital Organs—					
Displacements of Uterus ...	—	2	—	2	—
Dysmenorrhœa ... ..	—	1	—	1	—
Sterility ... ..	—	1	—	1	—
<b>VIII. Puerperal State.</b>					
143. A. Normal Labour ... ..	—	6	—	6	1
B. Accidents of Pregnancy—					
(c) Other Accidents of Pregnancy...	—	1	1	1	—
<b>IX. Affections of the Skin and Cellular Tissues.</b>					
152. Boil—					
Carbuncle ... ..	—	2	—	2	—
153. Abscess—					
Whitlow ... ..	—	2	—	2	—
Cellulitis ... ..	—	1	—	1	1
155. Herpes ... ..	—	1	—	1	—
<b>X. Diseases of Bones and Organs of Loco- motion (other than Tuberculous).</b>					
156. Diseases of Bones—					
Osteitis ... ..	—	6	—	6	2
157. Diseases of Joints—					
Arthritis ... ..	—	1	—	1	—
Carried forward ... ..	3	147	16	150	19

Diseases.	Remaining in Hospital 1930.	Yearly Total.		Total Cases Treated.	Remaining in Hospital 1931.
		Admissions.	Deaths.		
Brought forward ... ..	3	147	16	150	19
<b>XIV. Affections produced by External Causes.</b>					
176. Attacks of poisonous animals— Snake Bite ... ..	—	2	—	2	1
178. Burns (by Fire) ... ..	—	7	2	7	1
179. Burns (other than by Fire) ... ..	—	1	—	1	—
183. Wounds (by Firearms, war excepted)	—	4	1	4	1
184. Wounds by Cutting or Stabbing Instruments ... ..	—	28	—	28	—
185. Wounds (by Fall) ... ..	—	2	—	2	—
186. Wounds (in Mines or Quarries) ...	—	1	—	1	—
187. Wounds by Machinery ... ..	—	1	—	1	—
188. Wounds (Crushing, <i>e.g.</i> , Railway Accidents, etc.) ... ..	—	5	—	5	2
189. Injuries inflicted by animals (bites, kicks, etc.) ... ..	—	1	—	1	—
201. C. Fracture ... ..	—	5	—	5	—
Total ... ..	3	204	19	207	24



APPENDIX III.

Operations performed in Government Hospitals and Dispensaries.

Head and Neck.

Tonsillectomy	...	...	...	...	...	...	...	...	2
Excision of Glands	...	...	...	...	...	...	...	...	1

Thorax.

Amputation of breast (Halstead)	...	...	...	...	...	...	...	1
Resection of ribs	...	...	...	...	...	...	...	3

Abdominal.

Appendisectomy	...	...	...	...	...	...	...	4
Salpingectomy and Ovariectomy	...	...	...	...	...	...	...	2
Cholecystectomy	...	...	...	...	...	...	...	1
Liver abscess drainage	...	...	...	...	...	...	...	1
Uterine Ventro-suspension	...	...	...	...	...	...	...	2
Cæsarian Section	...	...	...	...	...	...	...	1
Hysterectomy	...	...	...	...	...	...	...	1
Herniotomy	...	...	...	...	...	...	...	1
Arthrotomy	...	...	...	...	...	...	...	1
Sequestrotomy	...	...	...	...	...	...	...	2
Plastic operations	...	...	...	...	...	...	...	6
Excision of Tumors	...	...	...	...	...	...	...	4
Curettage	...	...	...	...	...	...	...	6
Other Minor Operations	...	...	...	...	...	...	...	394



BECHUANALAND PROTECTORATE TEMPERATURE RETURNS, 1930-31.

1930-31.	APRIL.		MAY.		JUNE.		JULY.		AUGUST.		SEPTEMBER.		OCTOBER.		NOVEMBER.		DECEMBER.		JANUARY.		FEBRUARY.		MARCH.	
	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.	Max.	Min.
Ghanzi ...	80·00	54·73	74·32	41·42	70·70	35·23	74·29	38·00	76·39	49·42	85·30	47·20	91·58	58·45	94·53	64·33	91·25	64·19	87·35	63·68	92·96	64·32	84·87	61·32
Ngamiland ...	82·47	58·30	77·55	44·81	74·33	40·33	75·97	39·35	79·19	41·87	88·97	49·33	96·29	61·90	101·47	69·07	94·65	65·48	87·64	65·71	95·42	65·82	90·84	63·90
Kasane ...	83·20	60·65	79·09	48·34	76·82	44·11	77·90	45·06	83·34	47·64	90·54	54·01	97·19	65·35	96·66	69·03	88·23	66·81	88·58	67·48	91·29	67·25	90·65	66·81
Francistown	78·63	62·58	73·65	46·40	71·38	41·13	73·40	33·60	77·60	45·90	86·10	61·39	90·70	67·00	92·70	64·00	85·90	63·00	87·30	64·20	91·71	64·63	88·50	60·90
Serowe ...	79·56	54·10	73·29	37·84	70·13	34·20	72·39	34·19	75·58	39·23	86·00	50·83	87·94	56·41	91·97	63·27	87·32	63·58	84·58	61·87	89·82	60·75	86·06	58·03
Selika ...	81·93	56·77	76·26	43·10	72·23	38·57	73·87	37·64	78·32	44·23	86·36	53·90	88·97	62·81	92·66	67·60	90·42	68·32	86·00	67·13	92·18	68·00	88·38	64·48
Gaberones ...	79·00	52·50	75·29	37·58	71·00	34·56	71·80	31·36	74·26	37·42	84·39	47·00	89·03	46·83	93·13	54·87	88·93	55·71	86·61	56·26	90·64	56·21	86·32	56·94
Kanye ...	72·88	54·28	68·74	45·00	63·93	41·06	66·72	44·28	69·01	44·56	78·45	50·75	83·43	59·58	85·22	62·80	84·45	63·27	81·53	62·74	84·32	63·73	78·81	60·03
Lobatsi ...	76·83	47·93	72·94	25·45	67·97	32·87	70·16	33·52	70·55	37·58	82·43	45·93	83·58	53·19	90·80	61·60	87·68	63·68	85·90	62·06	88·57	61·18	82·10	57·87
Molepolole ...	77·63	53·00	73·39	41·42	62·20	32·07	71·77	37·71	74·26	40·81	83·57	51·00	89·41	58·83	91·36	63·56	91·28	64·53	87·52	64·90	90·10	63·39	85·06	59·45
Palapye Road	83·50	52·13	80·55	45·29	75·93	37·93	66·90	33·49	74·94	33·59	86·57	48·33	89·81	62·39	92·97	65·03	93·19	79·30	93·29	81·03	96·07	78·93	88·97	76·56
Total ...	875·63	606·97	825·07	456·65	776·62	412·06	795·17	408·20	833·44	462·25	938·68	559·67	987·93	652·74	1023·47	705·16	983·30	717·87	956·30	717·06	1003·08	714·21	950·56	686·29
Average ...	79·60	55·18	75·01	41·51	70·60	37·46	72·29	37·11	75·77	42·02	85·33	50·88	89·81	59·34	93·04	64·11	89·39	65·25	86·94	65·19	91·37	64·93	86·41	62·39

RAINFALL : 1930-31.

1930.	Ghanzi.	Ngamiland.	Kasane.	Francistown.	Serowe.	Selika.	Gaberones.	Kanye.	Lobatsi.	Mopolole.	Palapye Rd.
April ...	4.42	3.58	7.99	2.97	2.60	1.25	2.73	3.02	2.10	—	2.27
May ...	—	—	—	—	—	.05	.13	.18	.72	.06	—
June ...	—	—	—	—	—	.05	—	—	—	—	—
July ...	—	—	—	—	—	—	—	—	—	—	—
August ...	—	—	—	—	—	—	.11	.15	.20	—	—
September ...	—	—	—	.03	—	.03	—	—	.01	—	—
October ...	.15	.07	—	—	.01	—	.07	.14	.15	.04	—
November ...	1.07	.71	1.52	1.74	1.63	.65	3.91	1.84	2.40	3.43	1.08
December ...	2.96	4.59	6.72	6.06	5.17	6.75	3.40	3.10	3.86	3.67	3.41
1931.											
January ...	5.08	3.49	2.41	1.81	4.13	1.44	2.24	4.25	6.49	3.02	1.70
February...	3.46	3.76	1.82	1.53	.72	.86	1.45	1.55	1.48	1.90	.75
Mareh ...	10.79	3.31	1.78	2.51	1.25	2.35	2.14	3.03	2.74	3.57	1.65
Total ...	27.93	19.51	22.24	16.65	15.51	13.43	16.18	17.26	20.15	15.69	10.86

The Bechuanaland Protectorate lies, roughly, between 2,000 and 5,000 ft. above sea level and only a few people live at the cooler altitudes of from 4,000 to 5,000 ft. The portion of the country inhabited by the greater number of both Europeans and natives is adjacent to the only line of railway, which passes through the eastern side of the Territory for a distance of 403 miles ; the average altitude of the stations and sidings along this section of the line is 3,418 ft.

The approximate Latitude and Longitude of the various observation stations taken from the latest map of the Bechuana-land Protectorate (compiled by the Geographical Section General Staff, No. 2681 of 1912) is as follows :—

	Latitude S.	Longitude E.
Ghanzi (Gemsbok Pan)	... 21° 41'	21° 47'
Ngamiland (Maun)	... 20°	23° 30'
Kasane ...	... 17° 51'	25° 13'
Francistown ...	... 21° 9'	27° 28'
Serowe ...	... 22° 23'	26° 48'
Tuli Block (Selika)	... 23° 1'	27° 44'
Gaberones ...	... 24° 40'	25° 50'
Kanye ...	... 24° 59'	25° 18'
Lobatsi ...	... 25° 15'	25° 38'
Mopolole ...	... 24° 28'	25° 25'
Palapye Road ...	... 22° 30'	27° 4'

The time of observation is 8.30 a.m., and in all cases where this rule cannot be complied with a note must be made to that effect.

The self-registering thermometers are protected in the shade.

The rain gauges are placed in open positions free from obstruction from surrounding objects.

At the instance of the Union Government self-recording instruments, consisting of an anemograph, barograph, herno-graph and hygrograph were installed at Ghanzi.





